REQUEST FOR RECONSIDERATION

Claims 1-2 and 5-10 are active.

The claimed invention provides an alkoxylate mixture comprising the alkoxylates of the formula (I)

$$C_5H_{11}CH(C_3H_7)CH_2O(B)_p(A)_n(B)_m(A)_qH \qquad (I)$$

as described in Claim 1 of the present application. In the mixture from 85 to 96% by weight is an alkoxylate A1, in which C_5H_{11} is n-C_5H_{11}, and from 4 to 15% by weight is an alkoxylate A2, in which C_5H_{11} is $C_2H_5CH(CH_3)CH_2$ and/or $CH_3CH(CH_3)CH_2CH_2$.

Applicants have described that the claimed isomer mixture must be specially prepared or combined (page 4, lines 27-37):

> The novel alkoxylate mixtures are obtained by alkoxylation of the parent alcohols $C_5H_{11}CH(C_3H_7)CH_2OH$. The starting alcohols can be mixed from the individual components so that the novel ratio results. They can be prepared by aldol condensation of valeraldehyde and subsequent hydrogenation. The preparation of valeraldehyde and the corresponding isomers is effected by hydroformylation of butene, as described, for example, in US 4,287,370; Beilstein E IV 1, 32 68, Ullmanns Encyclopedia of Industrial Chemistry, 5th Edition, Volume A1, pages 323 and 328 et seq. The subsequent aldol condensation is described, for example, in US 5,434,313 and Römpp, Chemie Lexikon, 9th Edition, key word "Aldol Addition", page 91. The hydrogenation of the aldol condensate follows general hydrogenation conditions.

According to the structure of formula (I) the alkoxylates contain four blocks of ethyleneoxy and propyleneoxy units attached in the specific order beginning at O- of propyleneoxy-ethyleneoxy-propyleneoxy-ethyleneoxy. This specific order and the relative proportions of each block is a significant aspect of the claimed invention according to which the claimed invention provides surface active substances having an optimum set of performance properties including low aquatoxicity, low odor due to unreacted alcohol, rapid wetting, low foaming and low surface tension.

The rejection of Claims 1-2 and 5-10 under 35 U.S.C. 103(a) over Dahlgren et al. (WO 94/11331)('331) in view of Dahlgren et al. (WO 94/11330)('330) and further in view of Clement et al. (WO 01/04183 A1) is respectfully traversed.

Dahlgren('331) is directed to a process for cleaning hard surfaces with a detergent comprising an alkoxylate selected from the group consisting of

$$C_5H_{11}CH(C_3H_7)CH_2O(C_2H_4O)_nH$$

and

$$C_5H_{11}CH(C_3H_7)CH_2O(C_2H_4O)_p(B)_rH.$$

This reference specifically describes 2-propylheptanol as the starting alcohol for alkoxylation (page 1, lines 24-29). Dahlgren also describes that a specific combination of chain length and chain branching is required to obtain the desired foaming and detergent power (page 1, lines 10-21). Nowhere does the reference disclose or suggest isomeric forms of the C_5H_{11} portion of the alcohol chain and nowhere is there suggestion or motivation that would have led one of ordinary skill in the art, at the time of the present invention, to recognize that a specific isomer combination, as according to the present invention would provide significant improvement in emulsification, foam regulation and wetting of hard surfaces.

The Office has alleged that (Official Action dated October 9, 2009, page 4, lines 8-12):

> It is well known that C5H11 usually occurs or is formed as a mixture of isomers. Thus one having ordinary skill in the art at the time the invention was made would have a reasonable expectation that the C5H11 portion of the compounds of Dahlgren et al. '331 is also present as a mixture of isomers. Therefore, the mere selection of specific C5H11 isomers is obvious absent a showing of unexpected results.

Applicants respectfully disagree with the above statement. Dahlgren clearly is aware of the significance of chain branching/chain length influence as indicated above and has described the starting alcohol as 2-propylheptanol. As indicated by the attached description of 2-propylheptanol from "LookChem," the name recited by Dahlgren defines a specific chemical structure having a normal chain C5H11 component – not the isomer mixture according to the claimed invention.

Applicants note that in reversing an obviousness rejection in *Ex parte* SUSUMU TANAKA and YASUO MURAKAMI (Appeal 2007-3845; Decided: March 28, 2008) the Board of Patent Appeals and Interferences stated:

> In order to establish a prima facie case of obviousness, the Examiner must show that each and every limitation of the claim is described or suggested by the prior art or would have been obvious based on the knowledge of those of ordinary skill in the art. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)

In view of the facts that 1) Dahlgren is silent relative to C5H11 isomers being present in the mixture; 2) Dahlgren has described the influence of chain length and branching; and 3) Dahlgren discloses 2-propylheptanol, a specific chemical compound, Applicants respectfully submit that the conclusion by the Office quoted above cannot be sustained. The Office has not provided any rational underpinning to support its conclusion. Only in hindsight of the present invention would one of ordinary skill look to C5H11 isomeric mixtures.

> When prior art references require selective combination by the court to render obvious a subsequent invention, there must be some reason for the combination other than hindsight gleaned from the invention itself. *Interconnect Planning Corp.* 774 F.2d, 1143, 227 USPQ 551.

> Something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. *Lindemann Maschinenfabrik GmbH v. American Hoist and Derrick Co.* 730 F.2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984)

Dahlgren('330) is also directed to an alkoxylate of the formula:

$$C_5H_{11}CH(C_3H_7)CH_2O(B)r\ (C_2H_4O)_pH$$

which is based on 2-propylheptanol. The secondary reference, like the primary is silent with respect to C5H11 isomers and yet the secondary reference also notes the influence of chain branching and chain length (page 1, lines 11-22).

In contrast, the claimed invention is directed to an alkoxylate mixture comprising alkoxylates of the formula (I)

$$C_5H_{11}CH(C_3H_7)CH_2O(B)_p(A)_n(B)_m(A)_qH \qquad (I)$$

where A is ethyleneoxy, B is propyleneoxy and are present in the form of 4 blocks in the stated sequence, p is a number from 1 to 3, n is a number from 0.25 to 10, m is a number from 2 to 10, q is a number from 1 to 5, from 85 to 96% by weight of alkoxylates A1, **in which C_5H_{11} is n-C_5H_{11}, and from 4 to 15% by weight of alkoxylates A2, in which C_5H_{11} is $C_2H_5CH(CH_3)CH_2$ and/or $CH_3CH(CH_3)CH_2CH_2$.**

As indicated above, Applicants have described how the claimed isomer mixture is obtained and by so doing show that special techniques are necessary to provide the claimed composition. The claimed composition is not necessarily a result of convention preparation of 2-propylheptanol as the Office has alleged.

Clement is cited only to show a double metal cyanide catalyst for alkoxidation. The tertiary reference does not disclose or suggest the alkoxylate mixture according to the claimed invention.

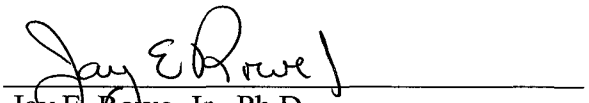
In view of all the above, Applicants respectfully submit that the cited combination of references does not disclose or suggest all the elements of the claimed invention nor is motivation which would have led one of ordinary skill in the art, at the time of the present invention to the composition according to the claimed invention, provided.

Therefore, in view of the foregoing, Applicants respectfully submit that the cited combination of references can not render the claimed invention obvious. Accordingly, withdrawal of the rejection of Claims 1-2 and 5-10 under 35 U.S.C. 103(a) over Dahlgren ('331) in view of Dahlgren ('330) and further in view of Clement is respectfully requested.

Applicants respectfully submit that the above-identified application is now in condition for allowance and early notice of such action is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



Jay E. Rowe, Jr., Ph.D.
Registration No. 58,948

Customer Number
22850

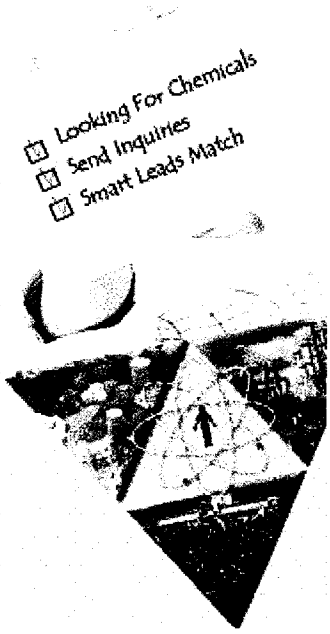
Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/07)

2-Propylheptanol (10042-59-8)

Please post your buying leads,so that our qualified suppliers will soon contact you!

Required Fields

Table of contents:



CAS: 10042-59-8

Purchase Request: Name:2-Propylheptanol

Your email:

Country/Region: Select your country

Description:

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Company:
Contact:
Tel:
MSN:
Requirements:
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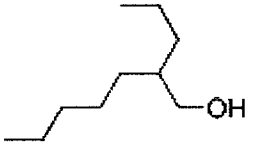
Send RFQ

Please tick the suppliers below to send inquiries. Or complete and post your buying offer of CA No 10042-59-8 above with your contact details. So that our qualified suppliers will send you quotations soonest.

Chemistry

Molecular Structure of 2-Propylheptanol (10042-59-8):



EINECS: 233-126-1

IUPAC Name: 2-Propylheptan-1-ol

Molecular Formula: $C_{10}H_{22}O$

Molecular Weight: 158.281080 g/mol

XLogP3-AA 3.8

H-Bond Donor 1

H-Bond Acceptor 1

Canonical SMILES: CCCCCC(CCC)CO

InChI: InChI=1S/C10H22O/c1-3-5-6-8-10(9-11)7-4-2/h10-11H,3-9H2,1-2H3

InChIKey: YLQLIQIAXYRMDL-UHFFFAOYSA-N

Index of Refraction: 1.434

Molar Refractivity: 49.87 cm^3

Molar Volume: 191.4 cm^3

Surface Tension: 28.9 dyne/cm

Density: 0.826 g/cm^3

Flash Point: 87.1 °C

Enthalpy of Vaporization: 52.78 kJ/mol

Boiling Point: 217.5 °C at 760 mmHg

Vapour Pressure: 0.0283 mmHg at 25 °C

Water Solubility: 151.8 mg/L at 25 °C

BRN: 1361442

Toxicity Data With Reference

1.	skn-rbt 10 mg/24H open MLD	AIHAAP	American Industrial Hygiene Association Journal. 23 (1962),95.
2.	orl-rat LD50:6730 mg/kg	AIHAAP	American Industrial Hygiene Association Journal. 23 (1962),95.

Consensus Reports

Reported in EPA TSCA Inventory.

Safety Profile

Safety Information of 2-Propylheptanol (10042-59-8):

RTECS: MJ4800000

Mildly toxic by ingestion. A skin irritant. When heated to decomposition it emits acrid smoke and irritating fumes. See also ALCOHOL, DENATURED; ALCOHOLS, C6-12; ALCOHOLS, C9-11; ALCOHOLS, C12-13, ETHOXYLATED; ALCOHOLS, C12-15, ETHOXYLATED; ALCOHOLS, C12-16, ETHOXYLATED; ALCOHOLS, C14-15, ETHOXYLATED; ALCOHOLS, C16-18, ETHOXYLATEI ALCOHOLS, C8-10, ETHOXYLATED PROPOXYLATED; ALCOHOLS, C12-15, ETHOXYLATED PROPOXYLATED; ALCOHOLS, N.O.S

Specification

2-Propylheptanol (10042-59-8) is known as 4-01-00-01827 (Beilstein Handbook Reference) ; AI3-25311 ; 1-Heptanol, 2-prop 2-Propylheptan-1-ol .